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Stephen G. Evangelides JR.

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09/19/2006

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EXAMINER

KIM, DAVID S

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

845

| | | | |
|------------------------------|-------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/699,604 | Applicant(s) EVANGELIDES ET AL. | |
| | Examiner David S. Kim | Art Unit 2613 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION**Drawings**

1. Applicant's compliance with the objections to the drawings in the previous Office Action (mailed on 05 April 2005) is noted and appreciated. Applicant responded by filing replacement drawings. The drawings were received on 27 March 2006.

- The replacement drawing for Fig. 2 is disapproved. Although the amended Fig. 2 itself is acceptable, this drawing is objected to as failing to comply with 37 CFR 1.84(p)(5) because it includes the following reference character not mentioned in the description: 101.
- The replacement drawing for Fig. 4 is disapproved. Applicant amended Fig. 4 of the instant application to include Raman pump source 507 and the connection from 507 to the line between 505 and 522. However, the original disclosure does not support Applicant's amendment.

In the original disclosure, the specification states that Fig. 4 shows an embodiment of the optical interface device shown in U.S. Application Serial No. 10/621,028. Note the corresponding embodiment in Fig. 5 from U.S. Application Serial No. 10/621,028.

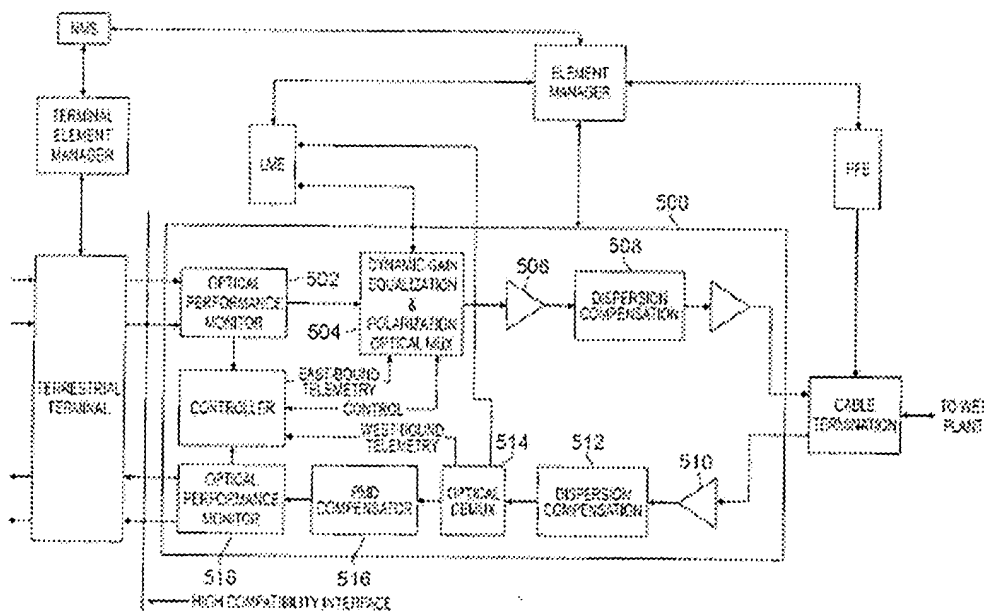
**FIG. 5**

Fig. 4 from the instant application is very similar to Fig. 5 from U.S. Application Serial No. 10/621,028. Clearly, Fig. 5 from U.S. Application Serial No. 10/621,028 corresponds Applicant's Fig. 4 of the instant application. Again, clearly, Fig. 5 from U.S. Application Serial No. 10/621,028 does not show Raman pump source 507 and the connection from 507 to the line between 505 and 522. Accordingly, Applicant's amendment to Fig. 4 is not supported, and Applicant's amended Fig. 4 is disapproved.

Moreover, even if one could reasonably argue that the embodiment of Fig. 4 may support the inclusion of Raman pump source 507, the connection from 507 to the line between 505 and 522 is not supported by the original disclosure.

- Although original claims 10, 20, 32, and 44 do disclose "means for supplying pump power to impart Raman amplification to the optical signals", drawing such means in the embodiment of Fig. 4 is not supported. On the other hand, these means may be supported in another drawing (not Fig. 4) of another embodiment of the interface device. Still, as these means are not provided in any approved drawing, the drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "means for supplying pump power to impart Raman amplification to the optical signals" must be shown or the feature canceled from the claims 10, 20, 32, and 44. No new matter should be entered.

2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-2, 5-6, 8, 11-12, 15-16, 18, 21-24, 27-28, 30, 33-36, 39-40, and 42** are rejected under 35 U.S.C. 102(b) as being anticipated by Chesnoy et al. (*Undersea Fiber Communication Systems*, hereinafter “Chesnoy”).

Regarding claim 1, Chesnoy discloses:

A land-based cable station for an undersea optical transmission system, comprising:

submarine line terminal equipment (SLTE) (p. 378, SLTE in Fig. 1) for processing terrestrial traffic received from an external source;

power feed equipment (p. 378, PFE) for supplying electrical power to active undersea components of the transmission system;

an element management system (p. 378, EMS) for configuring and obtaining status information from the transmission system;

a cable termination box (p. 378, CTB) in which an undersea cable terminates; and

wherein said SLTE includes:

terrestrial optical transmission equipment (e.g., p. 381, Tributary Block in Fig. 2, p. 387, top Tributary in Fig. 3) receiving the terrestrial traffic (p. 377, last line) and generating optical signals in response thereto; and

an interface device (e.g., p. 381, WDM Block, p. 387, WDM Block) providing signal conditioning to the optical signals received from the terrestrial optical transmission equipment so

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that the optical signals are suitable for transmission through the undersea optical transmission system.

Regarding claim 2, Chesnoy discloses:

The cable station of claim 1 wherein said terrestrial optical equipment is a SONET/SDH terminal (e.g., note usage of STM signals in Figs. 1 and 3, p. 381 and 387, STM signals belong to the SDH format, p. 409, section B).

Regarding claim 5, Chesnoy discloses:

The cable station of claim 1 wherein said undersea optical transmission system is a WDM (p. 377, WDM references) transmission system.

Regarding claim 6, Chesnoy discloses:

The cable station of claim 1 wherein the interface device is configured to perform at least one signal conditioning process selected from the group consisting of gain equalization (p. 383, section 2), bulk dispersion compensation (p. 391-392, bridging paragraph), optical amplification (line amps in Figs. 2-3), Raman amplification (p. 387, DRA in Fig. 3), dispersion slope compensation, PMD compensation, load balancing, and performance monitoring (SV CONT in Figs. 2-3).

Regarding claim 8, Chesnoy discloses:

The cable station of claim 1 wherein said interface device includes line monitoring equipment (SV CONT in Figs. 2-3).

Regarding claim 11, claim 11 is a system claim that corresponds largely to the apparatus claim 1. Therefore, the recited means in apparatus claim 1 read on the corresponding means in system claim 11. Claim 11 also includes limitations absent from claim 1. Chesnoy also discloses these limitations:

An undersea optical transmission system, comprising:

at least first and second cable stations (e.g., terminal Fig. 1 and the corresponding partner terminal at the other end of the submarine cable) remotely located with respect to one another;

an undersea optical transmission path (e.g., submarine cable in Fig. 1) optical coupling the first and second cable stations; and

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at least one optical repeater (repeater reference on p. 379, middle paragraph) located along the optical transmission path.

Regarding claims 12, 15-16, and 18, claims 12, 15-16, and 18 are system claims that introduce limitations that correspond to the limitations introduced by apparatus claims 2, 5, 6, and 8, respectively. Therefore, the recited means in apparatus claims 2, 5-6, and 8 read on the corresponding means in system claims 12, 15-16, and 18.

Regarding claim 21, Chesnoy discloses:

The undersea optical transmission system of claim 11 wherein said optical repeater includes at least one rare-earth doped optical amplifier (erbium-doped fiber amplifiers, EDFAs on p. 385, section B, 2nd paragraph).

Regarding claim 22, Chesnoy discloses:

The undersea optical transmission system of claim 11 wherein said undersea optical transmission path is a WDM transmission path (p. 377, WDM references).

Regarding claims 23-24, 27-28, 30, and 33-34, claims 23, 24, 27, 28, 30, 33, and 34 are system claims that introduce limitations that correspond to the limitations introduced by system claims 11, 12, 15, 16, 18, 21, and 22, respectively. Therefore, the recited means in system claims 11-12, 15-16, 18, and 21-22 read on the corresponding means in system claims 23-24, 27-28, 30, and 33-34.

Regarding claims 35-36, 39-40, and 42, claims 35, 36, 39, 40, and 42 are apparatus claims that introduce limitations that correspond to the limitations introduced by apparatus claims 1, 2, 5, 6, and 8, respectively. Therefore, the recited means in apparatus claims 1-2, 5-6, and 8 read on the corresponding means in apparatus claims 35, 36, 39, 40, and 42.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 3-4, 13-14, 25-26, 37-38, and 45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chesnoy as applied to the claims above, and further in view of Ramaswami et al. (*Optical Networks: A Practical Perspective*, hereinafter "Ramaswami").

Regarding claim 3, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein said terrestrial optical terminal is an ATM terminal.

However, ATM is a communication protocol that is so well known that it has become a standard. Ramaswami discusses ATM (p. 381+). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange said terrestrial optical terminal of Chesnoy to implement ATM (thus making the terminal of Chesnoy into an ATM terminal). One of ordinary skill in the art would have been motivated to do this since ATM provides various well-known advantages, such as the "ability to provide quality-of-service guarantees" (Ramaswami, p. 381, bridging paragraph).

Regarding claim 4, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein said terrestrial optical terminal is a Gigabit Ethernet terminal.

However, Gigabit Ethernet is a communication protocol that is so well known that it has become a standard. Ramaswami discusses Gigabit Ethernet (p. 398). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange said terrestrial optical terminal of Chesnoy to implement Gigabit Ethernet (thus making the terminal of Chesnoy into a Gigabit Ethernet terminal). One of ordinary skill in the art would have been motivated to do this since Gigabit Ethernet is a popular choice in various types of networks (Ramaswami, p. 398, 2nd paragraph). In one desired to have

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the network of Chesnoy communicate (“talk”) with other Gigabit Ethernet networks, implementation of the Gigabit Ethernet protocol (“language”) would be accordingly desired.

Regarding claims 13-14, claims 13 and 14 are system claims that introduce limitations that correspond to the limitations introduced by apparatus claims 3 and 4, respectively. Therefore, the recited means in apparatus claims 3-4 read on the corresponding means in system claims 13-14.

Regarding claims 25-26, claims 25 and 26 are system claims that introduce limitations that correspond to the limitations introduced by system claims 13 and 14, respectively. Therefore, the recited means in system claims 13-14 read on the corresponding means in system claims 25-26.

Regarding claims 37-38, claims 37 and 38 are apparatus claims that introduce limitations that correspond to the limitations introduced by apparatus claims 3 and 4, respectively. Therefore, the recited means in apparatus claims 3-4 read on the corresponding means in apparatus claims 37-38.

Regarding claim 45, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein said terrestrial optical equipment is an IP-based router.

However, IP is a communication protocol that is so well known that it has become a standard. Ramaswami discusses IP (p. 388+). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange said terrestrial optical terminal of Chesnoy to implement IP as an IP-based router (Ramaswami, the key network element in an IP network is an IP router, p. 390, section 6.3.1, 1st paragraph). One of ordinary skill in the art would have been motivated to do this since “IP is by far the most widely used wide-area network technology today. IP is the underlying network protocol used in the all-pervasive Internet and is equally important in most private intranets to link up computers” (Ramaswami, p. 388, section 6.3, 1st paragraph). In one desired to have the network of Chesnoy communicate (“talk”) with other IP networks, including the Internet, implementation of IP (“language”) would be accordingly desired.

8. **Claims 7, 17, 29, and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chesnoy as applied to the claims above, and further in view of the admitted prior art (hereinafter “APA”) and Ramaswami.

Regarding claim 7, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein the external source from which the terrestrial traffic is received is a terrestrial point-of-presence.

However, Chesnoy does teach the external source (e.g., p. 381, section 1, lines 1-2). Additionally, the APA teaches that such external sources are generally points-of-presence. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange the external source of Chesnoy to be a terrestrial point-of-presence. One of ordinary skill in the art would have been motivated to do this since terrestrial points-of-presence are also known as central offices (Ramaswami, p. 4, 4th full paragraph); central offices are conventionally known as sources of traffic, terrestrial or otherwise.

Regarding claim 17, claim 17 is a system claim that introduces limitations that correspond to the limitations introduced by apparatus claim 7. Therefore, the recited means in apparatus claim 7 read on the corresponding means in system claim 17.

Regarding claim 29, claim 29 is a system claim that introduces limitations that correspond to the limitations introduced by system claim 17. Therefore, the recited means in system claim 17 read on the corresponding means in system claim 29.

Regarding claim 41, claim 41 is an apparatus claim that introduces limitations that correspond to the limitations introduced by apparatus claim 7. Therefore, the recited means in apparatus claim 7 read on the corresponding means in apparatus claim 41.

9. **Claims 9, 19, 31, and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chesnoy as applied to the claims above, and further in view of the APA.

Regarding claim 9, Chesnoy does not expressly disclose:

The cable station of claim 8 wherein line monitoring equipment is a COTDR arrangement.

However, the APA teaches that COTDR arrangements in cable stations are known (paragraph [0004]). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include a COTDR arrangement as line monitoring equipment in the cable station of Chesnoy. One of ordinary skill in the art would have been motivated to do this since COTDR arrangements monitor

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and measure the optical of transmission lines (paragraph [0004]), thus providing useful diagnostic information to a practitioner of the cable station of Chesnoy in view of the APA.

Regarding claim 19, claim 19 is a system claim that introduces limitations that correspond to the limitations introduced by apparatus claim 9. Therefore, the recited means in apparatus claim 9 read on the corresponding means in system claim 19.

Regarding claim 31, claim 31 is a system claim that introduces limitations that correspond to the limitations introduced by system claim 19. Therefore, the recited means in system claim 19 read on the corresponding means in system claim 31.

Regarding claim 43, claim 43 is an apparatus claim that introduces limitations that correspond to the limitations introduced by apparatus claim 9. Therefore, the recited means in apparatus claim 9 read on the corresponding means in apparatus claim 43.

10. **Claims 10, 20, 32, and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chesnoy as applied to claim 1 above, and further in view of Takachio ("Application of Raman-distributed amplification to WDM transmission systems using 1.55- μ m dispersion-shifted fiber").

Regarding claim 10, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein said interface device includes means for supplying pump power to impart Raman amplification to *the* optical signals.

Rather, Chesnoy discloses means for supplying pump power (p. 387, DRA in Fig. 3, p. 392, section c) to impart Raman amplification to different optical signals, that is, optical signals arriving through a receiving portion (bottom portion of Fig. 2 or 3). However, means for supplying pump power to impart Raman amplification to optical signals departing through a transmitting portion is also known in the art, as shown by Takachio (e.g., left side pumping optical source in Fig. 1). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement such means for supplying pump power in the apparatus of Chesnoy. One of ordinary skill in the art would have been motivated to do this since doing so would help enable bidirectional pumping, which aids in extending transmission distance (Takachio, abstract).

Regarding claims 20, 32, and 44, claims 20, 32, and 44 are claims that all introduce limitations that correspond to the limitations introduced by claim 10. Therefore, the recited means in claim 10 read on the corresponding means in claims 20, 32, and 44.

11. **Claim 45** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chesnoy as applied to the claims above, and further in view of Suyama et al. ("WDM Optical Submarine Network Systems," hereinafter "Suyama").

Regarding claim 45, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein said terrestrial optical equipment is an IP-based router.

However, IP is a communication protocol that is so well known that it has become a standard. Suyama discusses IP and IP-based routers (p. 42). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange said terrestrial optical terminal of Chesnoy to implement IP as an IP-based router. One of ordinary skill in the art would have been motivated to do this since "[i]t is important to apply the IP technology to the submarine cable networks, as the international backbone network also shifts towards an IP based network" (Suyama, p. 42, section 4.2.3, 1st paragraph). Such an IP-based router would enable features like: efficient transportation of IP traffic, lower cost for network equipment, easy integration with other networks using IP protocols, simplified network architectures and protection, and the possibility to protect the network using the routing protocol (Suyama, p. 42, section 4.2.3).

12. **Claim 46** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chesnoy.

Regarding claim 46, Chesnoy does not expressly disclose:

The cable station of claim 1 wherein the external source from which the terrestrial traffic is received is a remotely located cable station.

However, Chesnoy does teach the external source (e.g., p. 381, section 1, lines 1-2). Additionally, cable stations are already known, as shown by the entire disclosure of Chesnoy. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange the external source of Chesnoy to be a remotely located cable station. One of ordinary skill in the art would have been motivated to do this as part of the integration of submarine and terrestrial systems (p. 402, section C).

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Such integration is desirable since seamless operation between submarine and terrestrial systems is required to achieve end-to-end path settings for paths that span across a mix of submarine and terrestrial systems (p. 402, section C).

Response to Arguments

13. Applicant's arguments filed 27 March 2006 have been fully considered but they are not persuasive. Examiner relies on the tributary block (e.g., p. 381, Tributary Block in Fig. 2, p. 387, top Tributary in Fig. 3) of Chesnoy to correspond to the "terrestrial optical transmission equipment" of Applicant's claims (see treatment of claim 1 above). Applicant argues,

"The tributary block in and of itself is not terrestrial optical transmission equipment. Rather, as discussed on pages 381 and 382 of Chesnoy, it is equipment that performs limited and highly specialized functions. More specifically, the tributary block is not terrestrial optical transmission equipment of the type discussed in Applicant's specification such as commercially available terrestrial equipment like the Nortel LH1600 and LH4000, Siemens MTS 2, and Cisco 15808 and the Ciena CoreStream long-haul transport products (see paragraph 21 of Applicants' specification). One of ordinary skill in the art will certainly recognize that the tributary blocks in the SLTE of Chesnoy are not substitutes for, and could not be substituted for, any of these commercially available products, which provide different features and functionality from the tributary block" (p. 12, 1st paragraph).

Applicant's arguments hinge on the definition of the term "terrestrial optical transmission equipment".

Applicant's arguments are not persuasive based on at least two grounds.

Firstly, the term "terrestrial optical transmission equipment" is quite broad. Here are some reasonable readings of this term:

- optical transmission equipment that is located at a terrestrial location, which is implied for the SLTE of Chesnoy
- optical transmission equipment that transmits terrestrial signals, which Chesnoy states on p. 377, last line

Applicant interprets the term "terrestrial optical transmission equipment" to mean terrestrial equipment like the Nortel LH1600 and LH4000, Siemens MTS 2, and Cisco 15808 and the Ciena CoreStream long-haul transport products. However, none of these examples of terrestrial equipment is cited in the claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Based on the general broadness of the term "terrestrial optical transmission equipment", Applicant's arguments are not persuasive.

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Secondly, even in light of Applicant's specification, the equipment of Chesnoy provides many of the same functions of the "terrestrial optical transmission equipment" of paragraph 21 of Applicant's specification. For example:

- optical-to-electrical conversion (Chesnoy, O/E in Fig. 2 or 3)
- FEC processing (Chesnoy, FEC in Fig. 2 or 3)
- electrical-to-optical conversion (Chesnoy, E/O in Fig. 2 or 3)
- optical multiplexing (Chesnoy, WDM COUP in Fig. 2 or 3)
- optical amplification (Chesnoy, optical amplifiers in Fig. 2 or 3)
- optical monitoring (Chesnoy, SV CONT in Fig. 2 or 3)
- network protection (Chesnoy, Protection units in Fig. 2 or 3)

However, even if one interprets the term "terrestrial optical transmission equipment" to include these functions, it would still not be sufficiently exclusive to defeat Chesnoy. Based on the further similarity of functions of the tributary units of Chesnoy to portions of Applicant's specification, Applicant's arguments are not persuasive.

As a remedy, Examiner respectfully suggests Applicant to precisely identify definite limitations of Applicant's "terrestrial optical transmission equipment" that distinguish it from Chesnoy's equipment and then to add them to the claim language. To simply argue or claim "terrestrial optical transmission equipment" that is cheaper or more compact than Chesnoy's equipment would not present patentable differences, as even Chesnoy looks to terrestrial technology for more compact designs (p. 409, section C). Rather, Examiner respectfully suggests Applicant to consider functions or structural details of Applicant's "terrestrial optical transmission equipment" that patentably differ from Chesnoy's equipment.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ueki and Merkel are both cited to show means for supplying pump power at the transmitting end of a transmission system.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK


KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER

*Disapproved by DSK
06 September 2006*

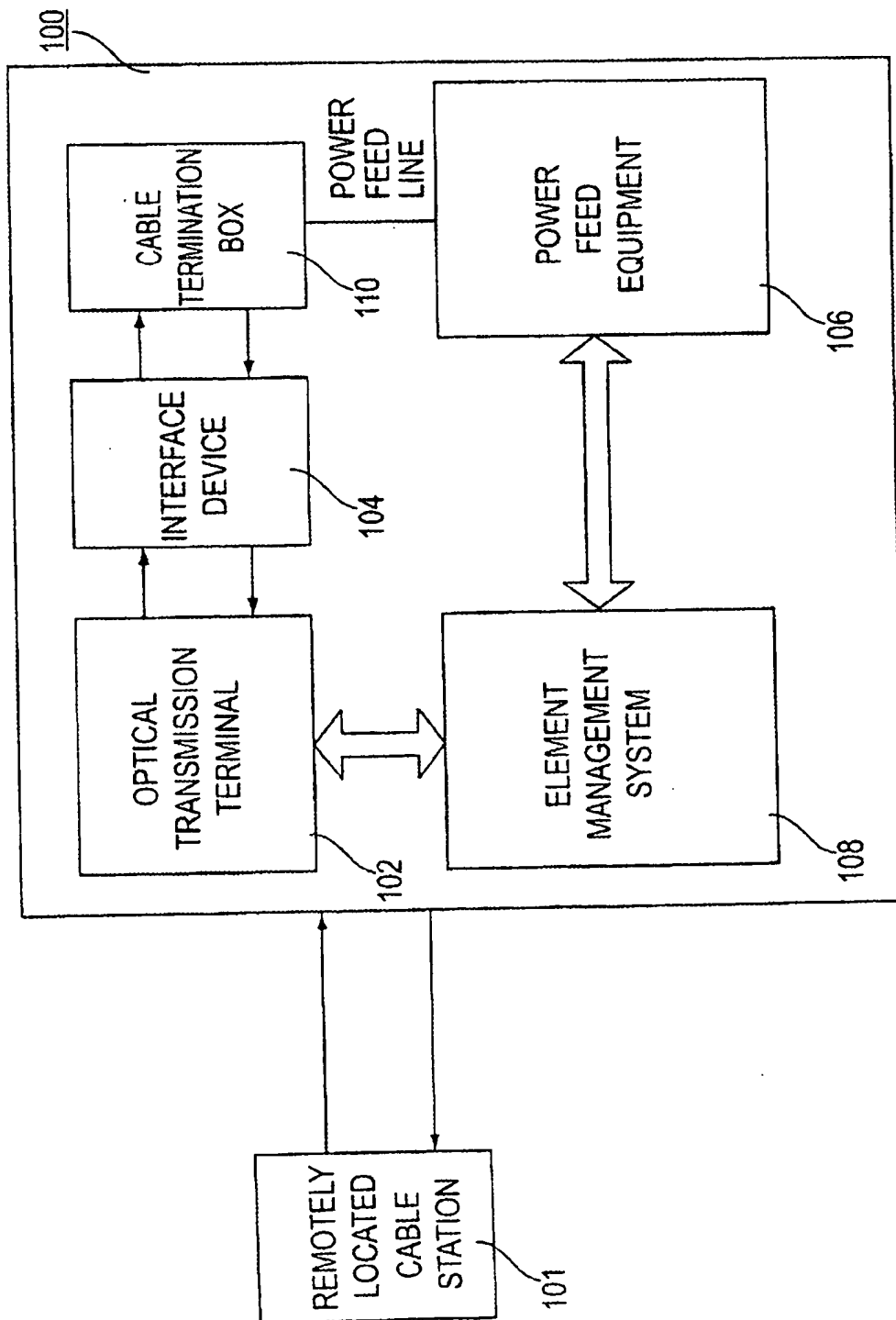


FIG. 2

REPLACEMENT SHEET

Serial No. 10/699,604
Group Art Unit 2633

4/4

Disapproved by DSK
06 september 2006

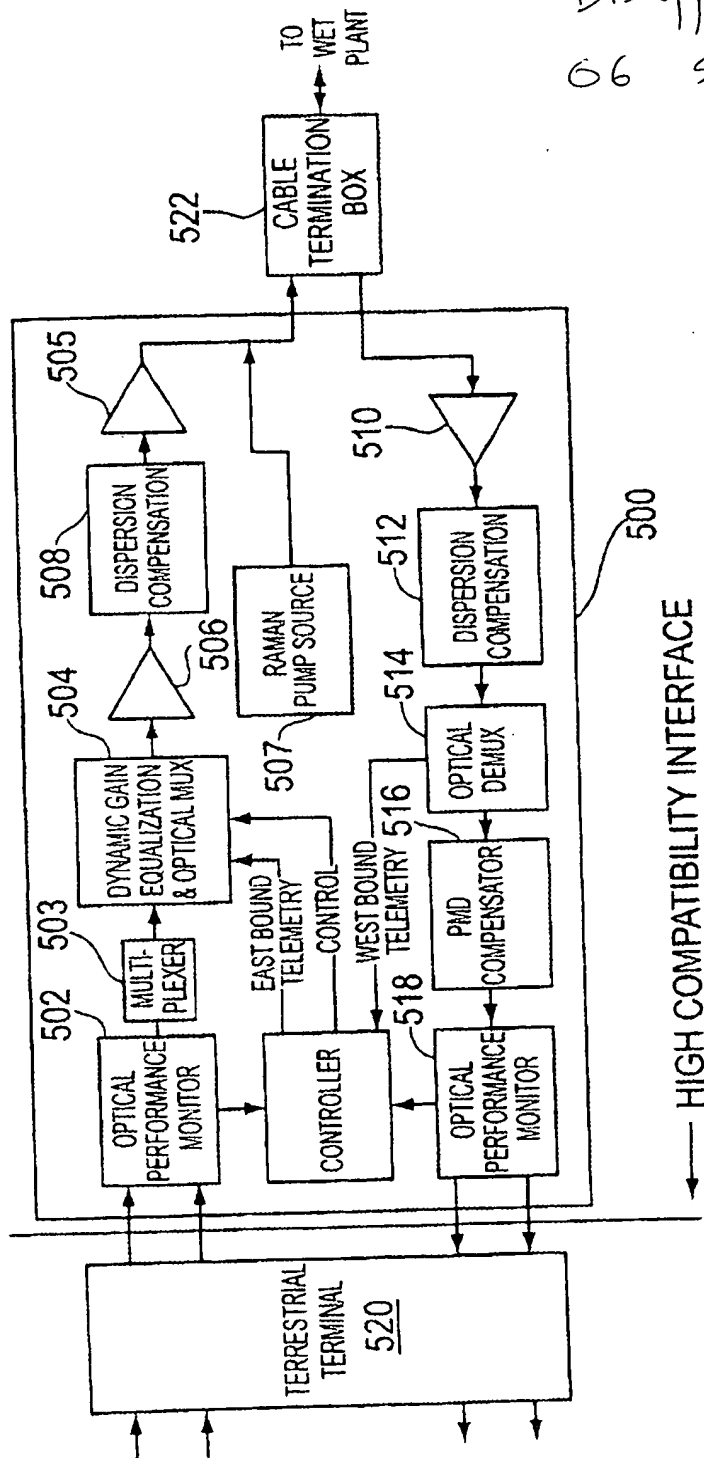


FIG. 4